

ON A NEW SPECIES OF ENTEROPNEUSTA (*PTYCHODERA AUSTRALIENSIS*) FROM THE COAST OF
NEW SOUTH WALES.

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(*Abstract.*)

The name *Ptychodera australiensis* is proposed for the first described Australian species of Enteropneusta. It is like other species of the genus, littoral in its habits, and occurs in considerable abundance at certain points along the coast of New South Wales.

Individuals vary very much in size; the largest specimen found measured when fully extended over 25 cm. in length, but the majority are very much smaller. The two sexes can readily be distinguished from each other by the different colouration of the sexual glands. In the males the testes are of a very deep yellow, or in some cases of an orange colour; while in the females the ovaries are of a light yellow or almost whitish colour. In both sexes the proboscis is of a light yellow colour, the collar of a slightly deeper yellow, while the tail region is almost colourless.

The species is especially characterised externally by the great development of the genital wings, which completely hide the gill area and extend far into the hepatic region, and by the presence of two longitudinal epidermal stripes extending over the anterior two-thirds of the tail region, and overlying the two ciliated bands of the intestine. The liver sacs present a distinctly paired arrangement in two longitudinal rows. The number of sacs averages between 40 and 50 on each side, but there may be as many as 60.

In the mode of formation of the proboscis pore *Pt. australiensis* appears to be the most variable of all Enteropneusts hitherto described. In the majority of the individuals examined the pore

occupies a median position, and then it may be formed in three ways: (1) from the union of both dorsal proboscis pockets into a single proboscis canal; (2) from the left pocket alone forming the canal; (3) from the right pocket alone. Then again the pore may be single and on the right side of the median line, or median and double.

The notochord (Eicheldarm) of this species does not essentially differ from that of *Pt. minuta* as described by Spengel. It possesses a distinct lumen extending to within a short distance of the apex; and opening into the lumen are numerous secretory cells.

An interesting feature is presented by the ventral wall of the heart-bladder. It is infolded into the cavity of the bladder forming a tube free anteriorly and communicating with the central blood space by a narrow longitudinal slit. This is regarded as a special modification to insure the better performance of the propelling function of the ventral wall of the heart-bladder.

The nerve cord of the collar essentially resembles that of *Pt. minuta*. As in that species a central lumen is absent. The "cord hollows" are, however, not so numerous as in that species. Two lateral longitudinal rows of such hollows are present, while smaller less regularly arranged hollows may be present mesially.

The "roots" vary in number from 1-4. The gonads are much branched, and in the genital region proper there are in connection with each genital pore at least six lesser branches.

As in the majority of the species of the genus two ciliated bands are present in the intestine. They extend forward for a considerable distance into the genital region proper.

The most interesting point in connection with the vascular system is the presence of a well-marked vessel which passes in the "chondroid" tissue occupying the space between the anterior portion of the "keel" of the proboscis skeleton and the posterior portion of the "end plate," and connects the two efferent proboscis vessels.

This paper, with illustrations, will appear in the next Part of the Proceedings.